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United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Washington Annual Data Summary

Water Year 1997



AGB2625
W2W37

58

An Annual Summary

Foreword

This report summarizes the snow water equivalent and precipitation data collected during this water year. This information was utilized in preparing the Natural Resources Conservation Service Water Supply Outlook Reports, January 1st through June 1st.

These data were obtained using a combination of manual and automated measurement methods and are presented as a historical summary.

For More Information

Copies of this Annual Data Summary and monthly Water Supply Outlook Reports may be obtained from the states listed below. Historical snow survey data may be obtained at those same offices. Computer access to water supply information may be gained through the Centralized Forecast System (CFS) at Portland, Oregon. For more information contact the state offices listed below.

STATE	ADDRESS
Alaska	949 E. 36th Avenue, Suite 400, Anchorage, AK 99508-4362
Arizona	3003 North Central Avenue, Suite 800, Phoenix, AZ 85012-2945
California	2121-C 2nd Street, Suite 102, Davis, CA 95616-5475
Colorado	655 Parfet Street, Room E200C, Lakewood, CO 80215-5517
Idaho	9173 W Barnes Dr., Suite C, Boise, ID 83709
Montana	Federal Building, Room 443, 10 E. Babcock, Bozeman, MT 59715
Nevada	5301 Longley Lane, Building F, Suite 201, Reno, NV 89511
New Mexico	6200 Jefferson NE, Albuquerque, NM 87109-3734
Oregon	101 SW Main Street, Suite 1300, Portland, OR 97204-3221
Utah	245 North Jimmy Doolittle Road, Salt Lake City, UT 84116
Washington	Rock Pointe Tower II, Suite 450, W. 316 Boone Ave., Spokane, WA 99201-2348
Wyoming	Federal Building, 100 East "B" Street, Casper, WY 82601

Other Sources

Annual and historical information is prepared by other agencies including: NOAA - State Climatological Annual Summaries, N.C.D.C., Asheville, NC 28801; California - Snow Survey Branch, California Department of Water Resources, P.O. Box 942836, Sacramento, CA 94236-0001; British Columbia - The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory - Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta Environment Technical Services Division, 9820 106th St., Edmonton, Alberta, T5K 2J6.

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Washington
Cooperative Snow Survey Data
of
Federal - State - Private
Cooperative Snow Surveys

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Natural Resources Conservation Service Data Collection Network

Introduction

The Natural Resources Conservation Service (NRCS) has operated the Federal-State-Private Cooperative Snow Survey Program in the western United States since 1935. Utilizing a network of automated SNOTEL (SNOWpack TELemetry) data collection sites, manual snow courses and storage precipitation gauges, NRCS collects, analyzes, and manages snowpack and climatic data in support of water supply forecasting and other resource management activities.

Initially, over 2000 snow courses were established to collect information on mountain snowpack which provides over 75 percent of the West's water supply. The current network consists of approximately 800 active snow courses. Since the late 1970's, over 570 SNOTEL sites have been installed to enhance the network—in many cases replacing existing snow courses. These remote stations not only provide more timely information, they also offer the opportunity to collect additional data needed for management of our natural resources.

SNOTEL Sites

A standard SNOTEL site consists of a snow pillow, a storage-type precipitation gauge, air temperature sensor, and a small shelter for housing the electronics. Additional parameters such as soil moisture, soil temperature, wind, humidity, and solar radiation are monitored at certain stations for specific applications. SNOTEL sites report on a daily or more frequent basis. The following is an explanation of the standard parameters measured at all SNOTEL sites.

Snow Water Equivalent (SWE): A snow pillow measures the snow water equivalent of the overlying snowpack. Snow pillows are "envelopes" of stainless steel or synthetic rubber (hypalon) containing an antifreeze solution. SWE is calculated by measuring the pressure exerted on these pillows by the weight of the snow. Hypalon snow pillows range in size from 6, 8, 10, or 12 feet in diameter with the larger pillows used in heavier snow accumulation zones. Stainless steel pillows are 4 feet x 5 feet and usually configured in groups of two, three, or four depending on snow depth.

Precipitation: The standard SNOTEL precipitation gauge is designed to store the expected annual precipitation at a specific site. The liquid equivalent (in inches) of rainfall, snow, sleet, or hail is measured by the gauge. The gauge is 12 inches in diameter with an alter shield at the orifice to reduce wind effect on precipitation catch. The height of SNOTEL precipitation gauges is designed to be at least three feet above the maximum expected depth of the snowpack, resulting in total gauge heights of 8, 12, 16, 20, 24, 28, and 32 feet.

Temperature: Daily maximum, minimum, and average ambient air temperatures are collected at each site with a self-aspirating shielded temperature sensor.

Snow Courses

Snow courses are permanently marked locations where snow depth and SWE are measured. Most snow courses consist of five to ten sample points. Individual measurements are averaged to derive one value of snow depth and SWE for each snow course. Typically, snow courses are measured near the first of the month from January to June, with mid-month measurements conducted at some locations.

Manual Precipitation Gauges

Manually measured precipitation gauges have a 6-, 8-, or 10-inch orifice. Most gauges have an alter shield to diminish the wind effect on precipitation catch. The gauges are measured near the end of the month to determine an approximate monthly precipitation total.

SNOTEL SWE's - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
ALPINE MEADOWS	3500	1st 15th	.0 .0	.0 .3	.4 4.3	4.3 6.6	14.8 14.3	20.0 18.2	22.1 19.7	21.3 21.7	12.5 .0	.0 .0	.0 .0	.0 .0	11/26	23.8	5/9	6/12
BLEWETT PASS	4270	1st 15th	.0 .0	.0 .6	.1 3.3	5.4 6.3	7.3 11.9	11.9 13.7	13.2 9.1	2.8 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/30	15.3	4/6	5/7
BUMPING RIDGE	4600	1st 15th	.0 .0	.0 1.2	.2 5.5	7.5 8.7	14.3 18.2	18.3 18.5	18.0 16.7	16.9 14.2	5.7 .0	.0 .0	.0 .0	.0 .0	11/28	19.0	3/10	6/6
BUNCHGRASS MDW	5000	1st 15th	.0 .0	1.4 3.2	2.5 6.6	7.6 10.8	14.1 18.4	22.0 22.3	23.2 22.1	21.6 19.6	8.7 .0	.0 .0	.0 .0	.0 .0	10/17	23.3	4/5	6/10
CORRAL PASS	6000	1st 15th	.0 .6	.4 2.0	4.0 8.8	11.9 14.3	21.2 24.7	27.6 29.5	31.1 31.5	33.9 33.2	28.8 13.3	.7 .0	.0 .0	.0 .0	10/21	34.4	5/13	7/2
COUGAR MOUNTAIN	3200	1st 15th	.0 .0	.0 .0	.0 3.8	4.4 3.6	10.9 9.5	9.1 7.0	6.6 .1	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	12/1	11.9	2/6	4/17
ELBOW LAKE	3200	1st 15th	.0 .0	.0 .3	.0 3.7	5.2 5.7	8.9 7.5	8.8 8.0	7.8 1.3	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	12/1	10.3	3/10	4/23
FISH LAKE	3371	1st 15th	.0 .0	.2 1.2	5.3 11.1	14.6 20.8	27.1 33.4	34.6 35.8	34.5 28.6	26.5 18.3	1.6 .0	.0 .0	.0 .0	.0 .0	10/19	37.4	3/10	6/3
GREEN LAKE	6000	1st 15th	.0 .0	.3 1.5	2.5 7.1	8.6 9.3	14.0 17.7	19.7 20.6	21.6 20.1	20.8 17.4	6.7 .0	.0 .0	.0 .0	.0 .0	10/25	21.6	4/1	6/7
GROUSE CAMP	5380	1st 15th	.0 .0	.2 1.7	1.1 5.2	6.9 8.4	11.7 15.8	19.3 17.7	18.0 14.1	11.5 3.3	.0 .0	.0 .0	.0 .0	.0 .0	10/27	19.6	3/7	5/21
HARTS PASS	6500	1st 15th	.0 1.3	2.1 9.4	18.4 24.7	27.1 33.1	35.5 44.3	48.2 52.6	53.0 54.0	58.7 60.0	50.5 30.9	15.1 .0	.0 .0	.0 .0	10/1	60.0	5/15	7/10
JUNE LAKE	3340	1st 15th	.0 .0	.0 .0	.0 4.4	2.9 .0	16.8 6.0	9.9 9.5	10.9 6.3	2.7 .0	.0 .0	.0 .0	.0 .0	.0 .0	1/17	17.6	1/30	5/7
LONE PINE	3800	1st 15th	.0 .0	.0 .5	.8 5.0	6.4 6.4	14.7 15.6	19.8 19.3	19.6 18.2	18.4 15.2	5.8 .0	.0 .0	.0 .0	.0 .0	11/26	21.2	3/8	6/6
LOST HORSE	5000	1st 15th	.0 .0	.0 .0	.3 4.6	6.0 6.3	11.0 13.7	16.2 16.8	16.4 12.6	8.6 .4	.0 .0	.0 .0	.0 .0	.0 .0	11/25	17.1	3/8	5/17

* - Permanent snowpack commenced in prior Water Year.

SNOTEL SWE's - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
LYMAN LAKE	5900	1st 15th	.0 .8	2.0 7.2	14.0 24.6	28.1 33.2	43.1 54.8	63.0 65.3	67.1 67.9	71.1 71.2	73.0 52.6	31.1 .0	.0 .0	.0 .0	10/10	74.7	5/22	7/15
MEADOWS PASS	3240	1st 15th	.0 .0	.0 .0	.0 4.2	5.0 5.6	12.0 10.8	11.3 8.5	8.9 .1	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	12/1	13.9	2/6	4/14
MINERS RIDGE	6200	1st 15th	.0 2.5	4.4 10.7	16.3 23.9	27.1 32.1	36.6 43.7	49.4 50.0	52.6 51.3	55.6 54.2	51.9 36.3	22.7 1.1	.0 .0	.0 .0	10/3	57.4	5/5	7/16
MORSE LAKE	5400	1st 15th	.0 .0	.0 3.0	4.3 14.4	18.3 22.8	31.3 38.5	43.7 45.3	46.0 47.4	52.3 50.9	44.1 17.0	1.9 .0	.0 .0	.0 .0	11/3	52.7	4/29	7/3
MOSES MTN	5300	1st 15th	.0 .0	.0 2.0	.5 7.4	8.5 9.8	11.4 13.3	14.8 14.8	15.0 13.3	10.6 5.2	.0 .0	.0 .0	.0 .0	.0 .0	11/27	15.3	4/3	5/27
MOUNT CRAG	4050	1st 15th	.0 .0	.0 .6	.2 5.3	7.1 7.0	11.0 11.4	16.7 16.3	16.7 14.2	14.7 14.1	4.5 .0	.0 .0	.0 .0	.0 .0	11/27	17.4	4/4	6/4
MOUNT GARDNER	2860	1st 15th	.0 .0	.0 .0	.0 2.4	2.7 2.5	9.2 9.2	8.8 5.8	4.7 .0	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	12/1	10.6	2/8	4/10
OLALLIE MEADOWS	3700	1st 15th	.0 .0	.0 4.2	3.9 13.3	16.6 19.8	31.1 30.7	35.9 29.4	33.5 30.8	35.4 33.7	20.3 .0	.0 .0	.0 .0	.0 .0	11/4	38.6	2/7	6/15
PARADISE	5120	1st 15th	.0 1.1	3.0 7.4	10.4 17.6	22.1 27.1	40.2 44.1	49.4 53.7	56.4 60.6	66.2 65.2	63.6 44.7	27.8 .0	.0 .0	.0 .0	10/22	66.9	5/14	7/14
PARK CREEK RIDGE	4600	1st 15th	.0 .0	.2 7.4	9.2 18.9	21.6 32.1	35.3 45.6	50.6 50.3	50.6 45.3	44.8 39.4	22.1 .0	.0 .0	.0 .0	.0 .0	11/4	51.9	3/10	6/14
PIGTAIL PEAK	5900	1st 15th	.0 .0	1.0 3.6	7.5 15.6	19.7 24.7	36.5 41.3	46.6 49.8	52.9 52.9	57.0 55.5	46.4 21.4	7.4 .0	.0 .0	.0 .0	10/25	57.7	5/13	7/6
POPE RIDGE	3540	1st 15th	.0 .0	.0 5.5	5.1 9.9	12.2 14.6	17.0 22.3	24.8 25.0	23.9 18.4	12.7 5.3	.0 .0	.0 .0	.0 .0	.0 .0	11/4	25.9	3/9	5/24
POTATO HILL	4500	1st 15th	.0 .0	.0 .3	1.4 5.9	6.3 7.1	13.4 14.4	17.5 17.5	18.1 15.5	14.5 9.6	.0 .0	.0 .0	.0 .0	.0 .0	11/25	18.9	3/8	6/1
QUARTZ PEAK	4700	1st 15th	.0 .0	.0 1.2	.9 2.2	3.2 5.2	7.8 8.4	11.4 12.0	12.0 8.2	5.4 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/7	12.8	3/9	5/14

* - Permanent snowpack commenced in prior Water Year.

SNOTEL SWE's - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
RAINY PASS	4780	1st 15th	.0 .0	1.2 8.0	12.0 19.3	22.1 30.8	36.6 45.6	51.3 50.3	51.4 47.6	50.0 49.8	36.8 20.0	1.8 .0	.0 .0	.0 .0	10/19	52.5	5/7	7/2
REX RIVER	4000	1st 15th	.0 100.0	.0 .0	.5 4.8	5.0 5.5	9.8 5.3	4.1 .4	1.3 .0	.3 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/30	12.8	1/29	3/18
SALMON MEADOWS	4500	1st 15th	.0 .0	.0 1.6	1.7 3.9	4.6 6.3	6.5 8.1	9.4 9.5	9.9 6.5	1.2 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/6	10.2	4/3	5/7
SASSE RIDGE	4200	1st 15th	.0 .0	.0 3.3	.2 6.8	10.0 12.5	19.1 27.7	29.0 29.9	30.6 26.4	24.7 16.8	.4 .0	.0 .0	.0 .0	.0 .0	11/4	31.4	4/4	6/2
SHEEP CANYON	4030	1st 15th	.0 .0	.0 .5	.3 4.3	4.2 1.9	11.6 5.2	9.4 8.	8.4 55.9	5.7 1.0	.0 .0	.0 .0	.0 .0	.0 .0	11/27	12.4	2/4	5/17
SKOOKUM CREEK	3920	1st 15th	.0 .0	.0 .0	.3 .7	.1 .3	8.6 .9	2.7 .0	1.7 .1	.3 .0	.0 .0	.0 .0	.0 .0	.0 .0	1/12	9.1	2/5	2/15
SPENCER MEADOW	3400	1st 15th	.0 .0	.0 .0	.0 5.0	6.6 5.7	15.9 14.5	19.6 19.0	18.3 12.3	9.1 .0	.0 .0	.0 .0	.0 .0	.0 .0	12/2	21.5	3/8	5/14
SPIRIT LAKE	3120	1st 15th	.0 .0	.0 .0	.4 1.5	.6 .6	8.3 .0	.7 .0	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	1/12	9.1	2/5	2/15
STAMPEDE PASS	3860	1st 15th	.0 .0	.8 4.7	4.9 11.0	12.9 16.2	23.1 26.3	30.3 32.3	34.8 31.4	31.8 28.4	15.0 .0	.0 .0	.0 .0	.0 .0	10/30	35.8	4/5	6/10
STEVENS PASS	4070	1st 15th	.0 .0	.0 4.7	4.4 10.7	13.0 17.1	23.1 28.3	30.0 29.5	31.1 26.1	25.4 20.0	4.7 .0	.0 .0	.0 .0	.0 .0	11/4	32.6	3/7	6/5
SURPRISE LAKES	4250	1st 15th	.0 .0	.0 .2	.0 6.2	9.0 12.3	24.2 23.5	28.8 29.3	31.0 30.2	32.8 28.1	15.6 .0	.0 .0	.0 .0	.0 .0	12/1	34.1	4/28	6/9
THUNDER BASIN	4200	1st 15th	.0 .0	.0 5.0	7.1 13.3	14.5 18.1	20.9 25.6	27.8 28.1	29.5 27.2	25.8 21.7	10.2 .0	.0 .0	.0 .0	.0 .0	11/4	30.0	4/2	6/11
TINKHAM CREEK	3000	1st 15th	.0 .0	.0 1.2	.3 6.4	7.9 10.3	17.1 17.3	18.5 17.2	19.1 12.7	7.7 .1	.0 .0	.0 .0	.0 .0	.0 .0	11/30	19.3	3/8	5/16
TOUCHET #2	5530	1st 15th	.0 .0	.0 .0	1.0 2.9	5.2 7.3	18.8 21.6	25.0 24.3	27.9 24.0	22.6 13.0	.0 .0	.0 .0	.0 .0	.0 .0	1/26	28.0	4/5	5/29

* - Permanent snowpack commenced in prior Water Year.

SNOTEL SWE's - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK				
															START DATE	MAX SWE	MAX DATE	MELTOUT DATE	
TROUGH	5300	1st	.0	.0	.3	5.3	8.4	10.0	13.0	5.4	.0	.0	.0	.0	.0	11/27	13.0	4/4	5/16
		15th	.0	.3	3.7	5.4	7.6	11.3	8.6	1.0	.0	.0	.0	.0	.0				
UPPER WHEELER	4400	1st	.0	.0	.1	4.9	9.2	11.1	12.2	3.3	.0	.0	.0	.0	.0	11/30	12.7	4/6	5/13
		15th	.0	.8	3.4	6.2	10.7	11.5	8.8	.0	.0	.0	.0	.0	.0				
WELLS CREEK	4200	1st	.0	.0	.9	6.2	11.4	14.6	16.0	11.5	2.9	.0	.0	.0	.0	11/25	16.3	3/26	6/6
		15th	.0	1.6	4.5	8.8	12.8	15.4	12.3	10.1	.0	.0	.0	.0	.0				
WHITE PASS E.S.	4500	1st	.0	.0	.1	5.9	11.9	15.6	17.5	15.0	1.3	.0	.0	.0	.0	11/27	17.9	4/4	6/3
		15th	.0	.4	4.5	6.9	13.9	16.5	15.4	11.7	.0	.0	.0	.0	.0				

* - Permanent snowpack commenced in prior Water Year.

Snow Course Data - WY 1997 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
AHTANUM R.S.	3100				Est	-	6.0	Est	-	.0									
AIRSTRIIP (DISC)	1800										Est	-	.0						
ALPINE MEADOWS	3500							2/27	50	16.6	3/26	42	16.3						
BAIRD #2	3220				1/29	21	3.3	2/29	22	5.5	3/27	13	4.6						
BEAVER CREEK TRAIL	2200				1/30	26	5.8	2/28	26	7.7	3/27	10	3.8	5/1	0	.0	5/31	0	.0
BEAVER PASS	3680				1/29	31	7.7	2/28	50	16.2	3/27	42	15.7	5/1	35	13.7	5/30	11	5.2
BEEHIVE SPRINGS(d)	4400																		
BERNE-MILL CREEK (d)	3170	12/28	25	8.2	1/30	56	15.3	2/28	62	21.5	3/29	58	24.0						
BIG BOULDER CREEK	3200										Est	-	15.4	Est	-	7.8			
BLEWETT PASS #2	4270				1/29	39	7.7	2/21	38	9.0	3/25	29	11.9						
BOYER MOUNTAIN	5250							2/29	45	13.9	3/28	41	14.8	4/30	29	11.7			
BRIEF	1600				1/28	26	6.4	2/26	26	9.3	3/29	11	2.4						
BROWN TOP AM	6000				1/29	110	36.4	2/28	134	51.0	3/27	126	52.2	4/30	139	53.1	5/30	115	54.2
BUMPING LAKE	3450	12/27	14	3.8							Est	-	12.4	Est	-	9.7			
BUMPING LAKE (NEW)	3400	Est	16	5.2	1/29	43	11.8	Est	44	15.1	3/27	31	13.2	4/29	6	3.1			
BUNCHGRASS MEADOWS	5000							2/28	70	21.4	3/27	62	22.1	4/29	55	22.0			
BUTTE CREEK	4070				Est	-	7.2	Est	-	7.8	3/28	23	7.7						
CARROL PASS	3650							2/25	35	9.0	3/29	16	6.0	5/1	18	8.0			
CAYUSE PASS	5300	Est	-	24.3	Est	-	51.8	Est	-	62.0	3/28	116	52.3	Est	-	103.7			
CHEWALAH	4930										3/29	30	10.3						
CHEWALAH #2	4930							2/27	36	10.3									
CHIWAUKUM G.S.	2500	12/28	18	5.5	1/30	34	7.4	2/28	38	12.5	3/29	28	11.0						

Snow Course Data - WY 1997 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
CITY CABIN	2390							2/27	25	8.8	Est	-	6.6						
CLOUDY PASS AM	6500				Est		30.9	3/1	123	49.2									
COLD CREEK MEADOW	3940				1/29	32	7.6	2/29	42	10.4									
COLD CREEK STRIP	6020				1/29	32	7.4	2/29	39	10.1	3/28	36	11.0						
COLOCKUM PASS	5370				1/30	40	9.0				3/25	38	14.9						
CORRAL PASS	6000	Est		13.9	2/3	76	25.0	2/28	80	29.4	3/30	85	34.8	Est	-	43.0			
COUGAR MOUNTAIN(d)	3200				2/3	41	8.4	2/28	26	9.6	3/30	21	6.6						
COX VALLEY	4500				1/29	45	10.7	2/28	63	15.7	3/30	44	15.9	4/27	47	16.1			
DEER PARK	5200				1/30	20	4.4	2/28	30	7.8	4/1	20	6.8	4/28	3	1.0			
DEVILS PARK	5900				1/29	91	30.0	2/29	114	42.6	3/28	108	42.8	4/30	109	46.2	5/30	86	40.6
DOCK BUTTE AM	3800	1/5	28	9.8	1/30	60	23.0	2/29	65	26.0	3/28	44	18.0						
DOMMERIE FLATS	2200	Est	10	2.0	1/31	33	6.0	3/1	24	7.3	3/29	0	.0						
DUNCAN RIDGE	5370							2/29	27	6.6	3/28	15	4.5						
EASY PASS AM	5200	1/5	42	15.0	1/30	92	37.0	2/29	120	53.0	3/28	100	44.0						
FISH LAKE	3370	12/27	30	10.2	1/30	68	21.6	2/29	72	28.2	3/27	60	26.9	4/29	40	20.4	5/29	0	.0
FREEZEOUT CK. TRAIL	3500				1/31	13	3.1	2/29	22	6.6	3/28	15	4.8	4/30	1	.6	5/31	0	.0
GOAT CREEK	3600				1/29	23	4.7	2/26	24	6.3	3/28	7	2.1						
GRANITE CREEK	3500				1/31	40	10.4	3/1	51	14.6	3/29	46	13.8	5/1	20	6.6	5/30	0	.0
GRASS MOUNTAIN #2	2900	12/27	0	.0	2/3	34	7.3	2/28	18	3.0	3/30	0	.0	5/1	0	.0			
GREEN LAKE	6000				Est	-	22.4	Est	-	32.6	Est	-	35.4						
GROUSE CAMP	5380				1/31	33	9.4				3/27	36	14.8						
HARTS PASS	6500				1/31	94	32.6	2/29	125	43.1	3/29	117	44.0	4/30	118	48.0	5/30	94	44.0

Snow Course Data - WY 1997 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
HURRICANE	4500				1/28	18	3.0	2/29	18	4.0	3/31	9	2.3	4/27	7	1.3			
INDIAN ROCK	5340																		
JASPER PASS AM	5400	1/5	40	13.0	1/30	120	43.0	2/29	125	50.0	3/28	120	49.0						
KELLER RIDGE	3700				1/26	19	3.8	2/29	16	4.7									
KROMONA MINE	2400				2/1	36	8.8												
LESTER CREEK	3100	Est	0	.0	2/3	41	9.0	2/28	37	13.0	3/30	32	11.2						
LITTLE MDWS AM	5280							3/1	122	51.2									
LYMAN LAKE	5900	Est	-	25.9							Est	-	69.2						
LYNN LAKE	4000	Est	5	1.8	2/3	35	9.7	Est	-	12.8	3/30	13	5.0	5/1	2	.5			
MARTEN LAKE AM	3600	1/5	28	9.6	1/30	70	27.0	2/29	84	33.0	3/28	60	26.0						
MEADOWS CABIN	1900				1/30	12	2.1	2/29	8	3.1	3/27	0	.0	5/1	0	.0	5/31	0	.0
MERRITT	2140	12/28	16	4.5	1/30	40	9.3	2/28	46	16.2	3/29	29	11.5						
MIDDLE SULTAN	3010																		
MISSION (OMAK)	1150				1/27	39	4.0												
MISSION RIDGE	5000							2/26	52	14.9	3/30	43	15.6						
MOSES MEADOWS (3)	3800				1/24	14	2.8	2/28	18	4.5									
MOSES MOUNTAIN (1)	4800				1/24	28	7.1	2/29	53	16.5									
MOSES PEAK (2)	6650				1/29	45	10.5	2/29	34	10.3									
MOUNT TOLMAN	2000				1/25	12	2.9	2/27	7	2.3									
MT. BLUM AM	5800	1/5	5	1.6	1/30	80	29.0	2/29	100	40.0	3/28	96	38.0						
MT. GARDNER	3300							2/27	19	6.4	3/27	8	3.1						
MUTTON CREEK #1	5700				1/30	33	8.7	3/1	41	12.0	3/27	35	12.3						

Snow Course Data - WY 1997 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
NEW HOZOMEEN LAKE	2800				1/29	15	3.7	2/28	20	5.5	3/27	14	4.3	4/30	0	.0	5/31	0	.0
OLALLIE MEADOWS	3630	Est	-	14.3	2/2	47	20.3	3/1	29	18.4	4/2	37	20.4						
OLNEY PASS	3250				2/1	28	6.4												
PARADISE PARK R S	5500				2/11	93	36.6												
PARK CREEK RIDGE	4600										Est	-	52.4						
POPE RIDGE	3540																		
RAGGED RIDGE	3330							3/7	15	4.0	3/27	0	.0						
RAINY PASS	4780				1/30	68	20.8	3/1	94	31.0	3/28	89	33.3	5/1	73	28.6	5/30	57	25.0
ROCKY CREEK AM	2100	1/5	9	3.0	1/30	40	13.0	2/29	36	14.0	3/28	4	2.4						
RUSTY CREEK	4000				1/30	22	5.2	3/1	23	7.0	3/27	16	5.3						
SALMON MEADOWS	4500				1/30	28	7.3	3/1	37	9.7	3/27	29	9.5						
SATUS PASS	4030				2/1	23	4.0												
SAWMILL RIDGE	4700	Est	24	6.8	2/3	40	11.2	2/28	44	17.2	3/30	47	19.7						
SCHREIBERS MDW AM	3400	1/5	24	8.2	1/30	58	21.0	2/29	58	23.0	3/28	36	15.0						
SF THUNDER CK AM	2200	1/5	5	1.6	1/30	20	7.0	2/29	4	1.5	3/28	0	.0						
STEMILT SLIDE	5000				1/27	35	8.0	2/27	41	10.9	3/28	28	10.7						
STEVENS PASS SAND SD	3700	12/28	26	7.9	1/30	60	15.3	2/28	63	23.3	3/29	55	22.8	4/25	35	15.6			
STICKNEY RIDGE	3640				2/1	53	17.6												
STRANGER MOUNTAIN	4230										3/29	24	7.5						
SUMMIT G.S.	4600				1/29	26	5.0	2/26	33	8.1	3/28	22	6.8						
SUMMIT G.S. #2	4600				1/29	27	5.0	2/26	36	8.3	3/28	27	8.4						
SUMMIT TRAIL(d)	3840				1/25	16	2.9	2/27	17	3.7									

Snow Course Data - WY 1997 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
THUNDER BASIN	4200				1/30	40	10.6	3/1	49	14.8	3/27	47	13.6	5/1	41	15.0	5/31	14	5.6
TOGO	3370				Est	-	6.2				Est	-	6.8						
TOUTS COULEE	2850				1/29	17	3.0	2/29	16	5.0	3/28	5	1.4						
TROUGH #2(d)	5310																		
TUNNEL AVENUE	2450	Est	13	4.0	1/30	49	11.6	2/28	42	15.7	3/28	30	13.5	4/30	8	4.0			
TWIN CAMP	4100	12/29	21	6.3	2/3	42	12.8	2/28	43	15.5	3/30	45	17.3						
TWIN LAKES	2700				1/25	19	3.7	2/27	17	5.7									
UPPER WHEELER	4400				1/27	22	5.2	2/27	22	5.6	3/28	9	2.7						
VAN EPPS PASS AM	5900										3/31	110	4.3						
WATSON LAKES AM	4500	1/5	28	9.5	1/30	62	22.0	2/29	68	26.0	3/28	60	25.0						
WHITE PASS E.S.	4500	Est	-	5.2	Est	-	12.3				Est	-	18.0						

Monthly Precipitation - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
ALPINE MEADOWS	3500	23.4	46.8	16.4	28.6	23.0	6.4	16.7	11.2	2.6	4.5	5.3	10.1	195.0
BLEWETT PASS	4270	4.0	11.3	6.3	6.1	11.7	2.5	4.9	1.6	.4	.2	.1	.8	49.9
BUMPING RIDGE	4600	7.7	23.2	12.1	11.4	19.8	2.4	7.9	3.3	.7	.5	.3	.7	90.0
BUNCHGRASS MDW	5000	6.3	6.5	6.8	6.9	8.3	1.5	6.8	8.1	2.6	1.5	1.3	2.4	59.0
CORRAL PASS	6000	7.8	14.9	9.0	11.3	13.2	4.7	6.0	4.4	2.2	2.1	.7	2.2	78.5
COUGAR MOUNTAIN	3200	13.0	30.3	12.7	17.4	11.0	3.8	9.3	7.4	2.0	.4	1.9	5.7	114.9
ELBOW LAKE	3200	19.7	44.4	24.5	18.7	17.5	6.5	12.9	11.1	2.0	3.6	2.1	8.6	171.6
FISH LAKE	3371	10.8	23.8	10.5	11.8	15.3	2.7	7.3	2.6	.6	.6	1.1	2.7	89.8
GREEN LAKE	6000	2.5	10.3	7.9	5.8	7.3	2.5	3.3	1.6	.3	.4	.1	.0	42.0
GROUSE CAMP	5380	2.2	7.1	6.1	5.2	7.8	2.4	3.6	.6	.8	.0	.0	.8	36.6
HARTS PASS	6500	5.2	16.3	6.6	8.9	5.8	3.0	5.6	2.5	.7	.4	.5	2.1	57.6
JUNE LAKE	3340	16.3	52.6	28.5	33.7	42.3	12.3	20.9	11.1	5.8	3.6	1.8	7.9	236.8
LONE PINE	3800	10.0	24.1	17.4	17.2	22.6	4.3	15.6	7.5	1.7	2.0	1.7	4.7	128.8
LOST HORSE	5000	1.9	7.9	7.9	6.4	9.9	2.3	3.2	1.8	.9	.0	.1	.7	43.0
LYMAN LAKE	5900	9.7	22.0	13.4	14.9	13.6	4.9	7.2	3.8	.7	.0	1.2	3.2	91.6
MEADOWS PASS	3240	14.1	33.2	12.6	19.2	18.4	6.5	8.5	7.0	2.3	.7	2.5	6.0	131.0
MINERS RIDGE	6200	11.2	24.8	12.4	10.0	16.4	3.8	7.9	5.9	1.3	1.0	2.3	4.7	101.7
MORSE LAKE	5400	7.4	18.1	14.9	12.8	18.2	5.3	11.0	5.8	.8	.8	.5	2.5	98.4
MOSES MTN	5300	1.2	2.6	4.4	3.2	4.2	1.1	3.5	5.7	2.6	.8	.2	2.0	31.5
MOUNT CRAG	4050	5.0	15.4	18.0	7.0	12.3	2.6	9.9	6.4	1.3	1.6	.4	3.5	83.4
MOUNT GARDNER	2860	14.6	33.7	12.5	20.3	18.4	5.5	10.8	8.6	2.4	1.3	2.4	6.1	136.6
OLALLIE MEADOWS	3700	19.1	43.0	18.3	28.0	23.9	5.7	12.0	8.8	2.3	1.8	3.1	7.2	173.2
PARADISE	5120	16.1	38.9	18.7	24.5	21.3	7.8	12.4	4.9	2.1	2.6	1.6	4.1	155.0
PARK CREEK RIDGE	4600	5.4	15.8	7.4	7.4	12.8	2.0	4.4	1.4	.3	.3	.3	1.5	59.0
PIGTAIL PEAK	5900	9.9	26.8	13.9	17.5	18.3	5.6	9.0	5.9	2.3	1.3	1.2	2.7	114.4
POPE RIDGE	3540	3.9	14.7	7.5	5.7	10.6	3.0	4.4	1.3	.6	2.4	.2	.9	55.2
POTATO HILL	4500	5.8	18.1	11.2	11.6	18.0	3.5	8.7	6.0	1.5	.7	.8	2.5	88.4
QUARTZ PEAK	4700	4.5	5.5	5.7	5.9	7.2	2.4	5.2	5.0	2.6	.3	1.0	2.1	47.4
RAINY PASS	4780	6.9	24.0	7.4	8.4	14.0	2.3	6.5	2.7	1.1	.7	1.1	2.4	77.5
REX RIVER	4000	10.3	36.6	13.6	20.8	18.8	4.8	11.2	7.8	2.7	1.5	2.7	6.5	137.3
SALMON MEADOWS	4500	.8	3.4	4.0	2.4	4.2	.3	3.4	3.2	2.3	.5	.4	1.6	26.5
SASSE RIDGE	4200	8.4	24.2	11.2	13.3	14.2	2.9	6.6	2.2	.7	.4	.4	1.9	86.4
SHEEP CANYON	4030	13.9	39.2	23.4	23.6	29.6	6.0	18.2	9.6	3.3	2.8	1.4	7.1	176.6
SKOOKUM CREEK	3920	20.0	44.5	14.9	24.8	19.2	7.1	15.3	11.2	3.0	2.3	4.4	8.0	174.7
SPENCER MEADOW	3400	8.8	28.2	16.8	21.6	23.0	4.3	16.3	8.4	2.8	2.5	.9	4.3	138.0

Monthly Precipitation - WY 1997 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
SPIRIT LAKE	3120	12.5	36.0	14.5	20.8	21.7	4.8	10.7	8.5	2.4	1.5	1.7	4.0	139.1
STAMPEDE PASS	3860	13.8	30.3	11.6	20.9	16.0	5.0	8.2	5.4	1.6	.9	2.7	5.3	121.7
STEVENS PASS	4070	17.8	36.3	12.0	17.7	14.8	7.3	8.0	5.1	1.1	1.4	2.4	4.5	128.4
SURPRISE LAKES	4250	9.7	30.1	17.9	21.7	22.2	6.6	11.3	9.6	2.3	1.4	1.4	4.7	138.9
THUNDER BASIN	4200	9.1	27.4	10.0	11.0	10.2	2.8	12.0	2.5	.7	.3	.9	2.6	89.5
TINKHAM CREEK	3000	16.6	36.4	15.9	20.4	17.4	6.2	11.2	8.4	2.2	1.0	2.6	5.9	144.2
TOUCHET #2	5530	5.3	17.1	7.3	16.1	9.2	2.6	8.3	3.8	1.5	.2	.3	1.7	73.1
TROUGH	5300	1.3	4.7	5.2	3.6	5.2	2.0	1.7	1.6	.4	.0	.0	1.2	26.9
UPPER WHEELER	4400	1.8	5.5	5.0	5.6	7.6	2.0	2.9	1.7	.7	.1	.1	.5	33.5
WELLS CREEK	4200	10.9	25.0	12.3	9.4	9.2	5.3	8.3	7.2	1.8	2.0	2.5	4.8	98.7
WHITE PASS E.S.	4500	4.8	14.8	9.3	9.1	13.0	3.1	4.2	4.2	1.6	.7	.2	1.0	66.0

SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
ALPINE MEADOWS	3500	1st	.0	.9	9.2	17.9	28.8	37.1	43.7	42.4	22.7	.9	.0	.0
		15th	.0	4.4	13.5	22.5	33.2	40.6	43.3	32.3	11.4	.0	.0	.0
BLEWETT PASS	4270	1st	.0	.5	3.9	8.3	13.6	17.0	17.8	4.9	.0	.0	.0	.0
		15th	.0	1.6	6.2	10.3	15.3	17.4	13.2	.5	.0	.0	.0	.0
BUMPING RIDGE	4600	1st	.0	.2	4.5	9.6	13.9	18.4	21.2	18.9	6.3	.0	.0	.0
		15th	.0	1.9	6.9	11.1	16.5	19.9	20.7	14.6	1.1	.0	.0	.0
BUNCHGRASS MDW	5000	1st	.0	1.1	5.6	10.9	17.8	21.5	26.6	26.9	15.4	.0	.0	.0
		15th	.0	3.2	8.2	14.4	20.5	25.0	27.7	22.9	.0	.0	.0	.0
CORRAL PASS	6000	1st	.0	.9	7.8	13.5	21.3	27.6	32.6	29.5	19.6	.0	.0	.0
		15th	.1	3.3	11.0	17.4	24.9	30.4	32.7	27.2	9.8	.0	.0	.0
COUGAR MOUNTAIN	3200	1st	.0	.3	3.7	8.3	15.0	18.6	18.8	9.3	.0	.0	.0	.0
		15th	.0	1.0	5.6	11.0	16.7	18.4	15.5	4.2	.0	.0	.0	.0
ELBOW LAKE	3200	1st	.0	.9	9.7	19.4	32.1	40.9	44.0	38.3	8.4	.0	.0	.0
		15th	.0	3.5	15.4	26.8	37.4	42.7	43.6	22.0	.0	.0	.0	.0
FISH LAKE	3371	1st	.0	.2	6.2	12.4	22.0	28.4	31.9	25.0	5.0	.0	.0	.0
		15th	.0	2.4	9.6	17.0	25.6	30.2	29.7	17.7	.4	.0	.0	.0
GREEN LAKE	6000	1st	.0	.6	4.8	9.0	14.1	17.5	20.7	19.7	3.8	.0	.0	.0
		15th	.1	2.2	7.2	11.6	16.0	19.2	21.1	15.6	.3	.0	.0	.0
GROUSE CAMP	5380	1st	.0	.3	4.6	8.9	13.8	17.1	19.8	9.2	.0	.0	.0	.0
		15th	.0	2.0	7.1	11.2	15.5	18.6	15.4	4.2	.0	.0	.0	.0
HARTS PASS	6500	1st	.0	2.0	10.6	17.9	27.7	34.6	41.3	42.0	25.3	1.3	.0	.0
		15th	.4	5.6	14.9	22.5	31.4	37.8	43.7	37.5	10.0	.0	.0	.0
JUNE LAKE	3340	1st	.0	.7	7.7	11.5	28.1	33.6	36.3	19.6	.0	.0	.0	.0
		15th	.1	2.8	8.8	20.3	31.9	35.2	28.5	8.0	.0	.0	.0	.0
LONE PINE	3800	1st	.0	.4	6.9	12.0	20.8	28.1	32.1	26.4	9.4	.0	.0	.0
		15th	.1	2.2	8.2	16.2	25.2	30.0	32.3	26.1	1.5	.0	.0	.0
LOST HORSE	5000	1st	.0	1.3	5.8	15.3	22.4	25.6	26.4	8.2	.0	.0	.0	.0
		15th	.0	1.5	10.8	19.0	22.7	26.4	22.1	.0	.0	.0	.0	.0

* - Average not established. C-Conditional Average (based on less than 25 years of data)

SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
LYMAN LAKE	5900	1st 15th	.0 .7	2.5 8.2	14.7 21.0	25.4 31.3	39.0 44.1	48.4 52.5	56.9 59.6	58.7 54.4	43.3 28.3	7.8 2.3	.0 .0	.0 .0
MEADOWS PASS	3240	1st 15th	.0 .0	.0 .0	3.2 6.7	9.5 12.4	16.2 17.5	18.1 22.4	24.9 23.5	21.0 8.7	.0 .0	.0 .0	.0 .0	.0 .0
MINERS RIDGE	6200	1st 15th	.0 1.0	2.1 7.3	15.6 21.4	25.6 32.4	40.2 43.3	46.9 50.6	52.2 51.6	51.3 48.5	38.1 27.6	15.7 5.7	.0 .0	.0 .0
MORSE LAKE	5400	1st 15th	.0 .0	.6 4.2	10.5 15.2	19.1 24.5	29.6 34.6	38.5 43.9	47.2 46.9	44.4 38.4	21.4 5.0	.0 .0	.0 .0	.0 .0
MOSES MTN	5300	1st 15th	.0 .0	.5 .9	3.9 4.8	6.5 7.9	10.0 11.3	11.7 14.3	15.5 12.9	7.3 .5	.0 .0	.0 .0	.0 .0	.0 .0
MOUNT CRAG	4050	1st 15th	.0 .0	.3 .6	4.4 7.2	11.3 14.5	16.9 22.1	26.5 31.1	31.5 29.9	22.4 10.7	.0 .0	.0 .0	.0 .0	.0 .0
MOUNT GARDNER	2860	1st 15th	.0 .0	.0 .0	1.8 3.8	5.8 7.7	9.6 11.4	14.2 14.1	14.0 13.1	10.8 7.0	.0 .0	.0 .0	.0 .0	.0 .0
OLALLIE MEADOWS	3700	1st 15th	.0 .3	1.3 4.7	11.3 16.3	20.3 27.3	34.3 40.6	44.6 47.9	53.5 53.2	51.0 46.2	30.0 13.4	1.5 .0	.0 .0	.0 .0
PARADISE	5120	1st 15th	.0 .5	1.7 6.9	14.8 19.5	23.6 31.7	38.5 47.7	47.9 53.8	62.1 67.9	61.8 61.3	48.1 34.9	17.5 4.9	.0 .0	.0 .0
PARK CREEK RIDGE	4600	1st 15th	.0 .1	1.4 3.5	8.7 14.2	18.4 25.0	29.6 35.0	40.6 41.4	41.6 43.1	33.6 25.1	5.2 1.2	.0 .0	.0 .0	.0 .0
PIGTAIL PEAK	5900	1st 15th	.0 .3	1.4 5.4	11.4 16.1	20.1 24.9	30.4 35.6	41.0 44.9	49.3 51.0	47.7 47.2	37.5 24.8	7.9 .9	.0 .0	.0 .0
POPE RIDGE	3540	1st 15th	.0 .0	.4 2.0	4.7 7.3	9.1 11.1	13.9 15.4	16.7 17.1	15.7 10.9	1.6 .0	.0 .0	.0 .0	.0 .0	.0 .0
POTATO HILL	4500	1st 15th	.0 .2	.4 2.1	5.6 7.9	10.5 13.4	16.4 19.0	21.9 23.2	25.3 21.4	17.0 10.6	1.1 .0	.0 .0	.0 .0	.0 .0
QUARTZ PEAK	4700	1st 15th	.0 .0	.0 1.8	3.7 5.9	8.5 11.2	14.0 16.4	18.6 20.4	21.9 21.9	18.6 12.9	.0 .0	.0 .0	.0 .0	.0 .0

* - Average not established. C-Conditional Average (based on less than 25 years of data)

SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
RAINY PASS	4780	1st	.0	1.4	8.4	15.4	24.5	32.7	38.0	36.8	20.4	.0	.0	.0
		15th	.3	4.2	12.6	19.9	29.0	35.6	39.1	31.8	8.0	.0	.0	.0
REX RIVER	4000	1st	.0	.0	3.6	10.5	17.9	20.1	27.6	23.1	.0	.0	.0	.0
		15th	.0	.0	7.4	13.8	19.3	24.8	26.5	9.6	.0	.0	.0	.0
SALMON MEADOWS	4500	1st	.0	.5	2.7	3.9	5.9	8.3	9.4	1.1	.0	.0	.0	.0
		15th	.0	1.1	3.8	5.2	7.1	9.3	5.7	.5	.0	.0	.0	.0
SASSE RIDGE	4200	1st	.0	.8	7.2	12.4	21.6	27.4	32.1	24.1	1.3	.0	.0	.0
		15th	.3	2.9	9.9	16.6	24.5	29.6	29.6	14.4	.0	.0	.0	.0
SHEEP CANYON	4030	1st	.0	.6	8.7	15.2	25.2	30.1	39.8	34.7	11.6	.0	.0	.0
		15th	.1	3.1	10.1	15.5	26.9	38.7	41.9	24.6	2.3	.0	.0	.0
SKOOKUM CREEK	3920	1st	.0	.9	9.7	19.0	30.6	39.4	46.4	45.0	24.1	.9	.0	.0
		15th	.0	4.6	14.4	24.6	35.3	43.1	45.9	34.3	12.1	.0	.0	.0
SPENCER MEADOW	3400	1st	.0	.0	4.5	9.4	20.0	27.2	29.6	17.2	.0	.0	.0	.0
		15th	.0	.9	6.0	14.0	24.8	28.1	25.8	.0	.0	.0	.0	.0
SPIRIT LAKE	3120	1st	.0	.0	1.3	1.8	6.4	6.6	3.6	.3	.0	.0	.0	.0
		15th	.0	.9	2.7	4.6	7.3	4.9	.3	.0	.0	.0	.0	.0
STAMPEDE PASS	3860	1st	.0	.7	9.5	16.7	28.8	38.2	44.4	39.1	15.0	.0	.0	.0
		15th	.2	3.6	13.6	23.2	34.6	40.3	43.6	31.2	3.6	.0	.0	.0
STEVENS PASS	4070	1st	.0	.8	8.0	15.3	27.3	34.7	42.3	32.1	5.7	.0	.0	.0
		15th	.1	3.1	12.2	20.9	31.4	40.0	39.1	21.8	1.7	.0	.0	.0
SURPRISE LAKES	4250	1st	.0	.8	10.6	20.2	30.4	37.5	44.2	36.1	14.5	.0	.0	.0
		15th	.1	3.8	14.0	24.3	34.5	39.8	42.6	31.6	.9	.0	.0	.0
THUNDER BASIN	4200	1st	.0	.7	7.6	15.3	25.3	32.3	34.7	30.5	6.9	.0	.0	.0
		15th	.3	2.8	12.1	21.2	29.5	33.7	34.3	17.4	.0	.0	.0	.0
TINKHAM CREEK	3000	1st	.0	.0	2.6	7.6	12.9	17.2	19.9	16.7	.0	.0	.0	.0
		15th	.0	.0	5.4	10.0	15.3	17.9	19.1	7.0	.0	.0	.0	.0
TOUCHET #2	5530	1st	.0	.0	5.7	12.9	20.8	27.8	31.9	27.3	.0	.0	.0	.0
		15th	.0	2.9	8.9	16.7	24.6	30.3	31.0	19.2	.0	.0	.0	.0

* - Average not established. C-Conditional Average (based on less than 25 years of data)

SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TROUGH	5300	1st 15th	.0 .1	.2 1.4	2.6 3.5	4.9 5.4	6.4 8.4	9.0 9.8	9.7 7.4	2.5 1.3	.0 .0	.0 .0	.0 .0	.0 .0
UPPER WHEELER	4400	1st 15th	.0 .0	.2 1.7	3.0 3.9	5.9 7.2	9.3 10.8	12.1 13.1	13.6 11.7	4.8 1.0	.0 .0	.0 .0	.0 .0	.0 .0
WELLS CREEK	4200	1st 15th	.0 .0	1.0 4.1	11.2 17.9	20.0 25.5	32.1 37.7	43.4 49.0	51.0 50.5	49.3 45.9	29.1 8.2	.0 .0	.0 .0	.0 .0
WHITE PASS E.S.	4500	1st 15th	.0 .1	.7 3.0	4.9 7.2	9.8 12.4	15.5 18.6	20.7 21.6	22.9 22.5	18.7 14.0	4.6 1.1	.9 .0	.0 .0	.0 .0

* - Average not established. C-Conditional Average (based on less than 25 years of data)

Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
AHTANUM R.S.	3100	3.5		5.8		6.8		5.3					
AIRSTRIP (DISC)	1800	1.9		3.9		3.5		1.2		42.4		22.7	
ALPINE MEADOWS	3500					33.8		43.7					
BAIRD #2	3220			6.4		7.2		6.2					
BEAVER CREEK TRAIL	2200			9.7		12.6		11.6		4.1			
BEAVER PASS	3680			19.7		25.1		29.7		28.1			
BIG BOULDER CREEK	3200	7.8		12.8		18.0		17.8		7.7			
BLEWETT PASS #2	4270	6.4		11.6		14.3		15.1		7.5			
BOYER MOUNTAIN	5250					21.6		25.7		23.6		5.0	
BRIEF	1600			6.0		6.9		2.5					
BROWN TOP AM	6000			41.2		51.9		59.6		61.7			
BUMPING LAKE	3450	6.0	9.9	11.6	13.3	14.0	15.6	14.2	12.1	7.5	2.7	1.2	
BUMPING LAKE (NEW)	3400	7.5	12.2	14.2	16.9	17.6	19.8	18.3	16.5	10.9	9.3		
BUNCHGRASS MEADOWS	5000	14.8		21.8		26.6		29.5		26.8		5.0	
BUTTE CREEK	4070	4.2		6.4		8.2		9.0		5.7			
CARROL PASS	3650	11.0		17.5		23.8		31.3		26.9			
CAYUSE PASS	5300	32.4		52.9		65.3		82.4		88.1			
CHEWALAH	4930			10.2		13.5		16.1					
CHEWALAH #2	4930			11.3		15.0		18.0					
CHIWAUKUM G.S.	2500	4.8		8.7		10.7		8.9		1.0			
CITY CABIN	2390					12.3		13.6					
CLOUDY PASS AM	6500			27.1		32.9		42.1					
COLD CREEK MEADOW	3940												
COLD CREEK STRIP	6020												
COLOCKUM PASS	5370			11.5		14.5		16.5					
CORRAL PASS	6000			21.7		33.9		40.1		37.5			
COX VALLEY	4500			24.9		32.4		39.5		39.1			
DEER PARK	5200			13.5		17.3		20.9		18.7			
DEVILS PARK	5900			30.3		36.9		42.9		45.0		31.8	
DOCK BUTTE AM	3800	25.7		41.1		56.1		65.4		66.8		52.5	
DOMMERIE FLATS	2200			7.0		7.7		4.3					
DUNCAN RIDGE	5370												
EASY PASS AM	5200	27.1		45.6		64.5		82.9		85.4		73.3	
FISH LAKE	3370	10.7		21.1		29.3		31.4		22.4			
FREEZEOUT CK. TRAIL	3500			8.8		11.1		11.5		7.0			

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Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
FROST MEADOWS	4630												
GOAT CREEK	3600	3.5		5.2		6.4		4.3					
GRANITE CREEK	3500			13.0		15.8		17.1		10.7			
GRASS MOUNTAIN #2	2900	4.8		10.3		13.9		15.9		2.3			
GREEN LAKE	6000			22.6		29.1		33.9					
GROUSE CAMP	5380												
HARTS PASS	6500			12.2		15.5		17.1					
HURRICANE	4500			29.6		36.2		42.6		45.1			
INDIAN ROCK	5340			13.7		17.4		22.1		21.9			
IRENE'S CAMP	5530			18.2									
JASPER PASS AM	5400	37.9		58.8		75.0		86.0		89.3		81.1	
KELLER RIDGE	3700			4.5		4.4		3.0					
KROMONA MINE	2400			18.1		29.1		33.8		23.4		1.4	
LAKE CLE ELUM	2200		6.7		9.0		8.5		1.9				
LESTER CREEK	3100	8.0		14.8		17.7		23.3		15.0			
LITTLE MDWS AM	5280												
LYMAN LAKE	5900	23.5		30.2		37.2		44.0					
LYNN LAKE	4000	7.6		40.5		49.8		58.7					
MARTEN LAKE AM	3600	30.1		14.8		16.0		22.0		10.7			
MEADOWS CABIN	1900			48.2		63.6		73.4		75.8		65.5	
				5.4		6.2		4.8		1.1			
MERRITT	2140	7.1		12.4		14.4		12.8		3.6			
MIDDLE SULTAN	3010			9.4		16.9		20.2		13.0			
MISSION (OMAK)	1150					3.0							
MISSION RIDGE	5000			11.5		14.0		16.5					
MOSES MEADOWS (3)	3800			1.7		2.4				5.5			
MOSES MOUNTAIN (1)	4800	5.9		9.4		14.4		13.5		10.0		13.5	
MOSES PEAK (2)	6650	3.7		6.5		10.3		5.7					
MOUNT TOLMAN	2000			3.1		3.5							
MT. BLUM AM	5800	24.4		41.3		55.9		63.1		69.1		68.1	
MT. GARDNER	3300					14.2		14.1					
MUTTON CREEK #1	5700			9.2		11.4		13.2		9.6			
NEW HOZOMEEN LAKE	2800			8.0		10.9		10.4		4.5			
OLALLIE MEADOWS	3630	18.2		29.3		38.7		44.8		43.5		41.3	
OLNEY PASS	3250			12.0		21.5		25.6		16.6			
PARADISE PARK R S	5500	28.3		47.0		56.9		68.5					

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Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
PARK CREEK RIDGE	4600	17.5		33.2		42.5		43.1					
POPE RIDGE	3540			13.6		17.1		16.8		8.0			
RAGGED RIDGE	3330	3.8		6.2		7.4		3.5					
RAINY PASS	4780	25.3		27.7		33.4		39.3		40.6			
ROCKY CREEK AM	2100	11.7		20.0		25.2		27.8		19.1		1.8	
ROUND TOP MTN	4020												
RUSTY CREEK	4000	3.8		5.0		6.2		5.9		.5			
SALMON MEADOWS	4500			6.8		8.9		9.4		4.6			
SATUS PASS	4030			7.7		8.2		7.7		2.8			
SAWMILL RIDGE	4700	13.3		23.9		29.7		36.3		28.2		16.6	
SCHREIBERS MDW AM	3400	21.9		35.1		47.9		58.8		56.2		41.4	
SF THUNDER CK AM	2200	4.5		6.2		7.9		4.9		1.1			
STEMILT SLIDE	5000			10.3		12.7		12.8		6.4			
STEVENS PASS SAND SD	3700	14.6		23.9		31.1		33.7		28.7		9.7	
STICKNEY RIDGE	3640			49.9		59.8		68.2		54.8		32.6	
STRANGER MOUNTAIN	4230			8.1		10.8		12.2					
SUMMIT G.S.	4600	3.6		5.6		7.1		8.1		5.6			
SUMMIT G.S. #2	4600			5.9		7.8		8.9					
THOMPSON CREEK	2500												
THUNDER BASIN	4200			13.5		18.5		21.7		21.8		10.0	
TOGO	3370			7.8		9.3		10.8					
TOUTS COULEE	2850			2.9		3.5		1.2					
TUNNEL AVENUE	2450												
TWIN CAMP	4100	8.1	13.7	15.4	19.3	19.2	23.7	20.8	19.8	12.7	11.8	2.7	
TWIN LAKES	2700	10.0		16.9		21.8		25.1					
				6.7		8.7		5.2					
UPPER WHEELER	4400			8.0		9.4		7.8		1.4			
VAN EPPS PASS AM	5900	25.1		37.1		39.2		52.6					
WATSON LAKES AM	4500	24.2		38.7		53.3		64.9		67.2		57.4	
WHITE PASS E.S.	4500	8.8	13.0	16.0	19.4	20.7	23.7	23.5	25.0	23.3	26.1	12.0	

* - Average not established. C-Conditional Average (based on less than 25 years of data)

Monthly Precipitation Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
ALPINE MEADOWS	3500	10.7	20.0	16.0	21.3	16.0	14.7	12.0	6.7	5.3	2.7	2.7	5.3	133.4
BLEWETT PASS	4270	2.2	5.5	5.4	7.2	4.5	2.9	2.0	1.2	1.5	.4	.4	1.5	34.7
BUMPING RIDGE	4600	3.6	9.4	8.1	7.3	7.1	5.7	3.9	2.9	2.6	.9	.8	2.4	54.7
BUNCHGRASS MDW	5000	3.0	8.8	5.1	5.6	3.7	5.5	3.8	4.9	3.8	1.7	1.8	2.4	50.1
CORRAL PASS	6000	3.6	9.8	7.5	9.8	6.7	6.5	5.0	4.2	2.5	1.1	1.2	2.3	60.2
COUGAR MOUNTAIN	3200	7.8	17.3	11.4	13.5	10.1	10.2	7.3	6.3	4.2	2.7	2.3	4.9	98.0
ELBOW LAKE	3200	12.0	21.4	21.2	20.0	14.7	13.3	8.0	6.7	5.2	2.7	2.6	5.4	133.2
FISH LAKE	3371	5.1	9.9	8.1	10.6	8.3	6.0	2.8	2.6	1.5	1.7	1.1	2.3	60.0
GREEN LAKE	6000	2.4	6.4	5.2	6.2	4.4	4.5	2.5	1.7	1.3	.8	.6	1.1	37.1
GROUSE CAMP	5380	1.7	5.7	4.6	5.2	4.1	3.9	1.9	1.3	1.6	.6	.8	1.1	32.5
HARTS PASS	6500	4.0	9.3	6.4	8.0	5.6	6.1	4.0	3.1	1.9	1.4	1.2	2.5	53.5
JUNE LAKE	3340	10.2	27.2	18.2	26.0	15.7	21.2	11.0	9.3	4.9	2.4	2.1	4.5	152.7
LONE PINE	3800	7.3	13.6	11.5	18.2	13.5	10.6	6.4	5.0	3.0	.8	1.3	2.6	93.8
LOST HORSE	5000	1.6	5.6	5.1	5.8	4.1	4.3	2.3	1.6	1.2	.7	.5	1.1	33.9
LYMAN LAKE	5900	6.8	12.4	10.4	13.3	8.5	8.0	6.2	3.5	2.5	2.0	1.6	3.2	78.4
MEADOWS PASS	3240	7.2	12.7	14.5	14.6	10.0	8.1	6.3	4.5	3.6	1.8	2.7	4.5	90.5
MINERS RIDGE	6200	6.4	9.4	12.4	9.6	7.8	6.9	4.8	2.3	2.1	1.4	1.6	4.1	68.8
MORSE LAKE	5400	3.9	14.8	9.1	11.7	8.6	10.2	6.0	4.5	2.3	1.0	1.0	1.8	74.9
MOSES MTN	5300	2.2	4.1	4.4	2.9	3.0	3.3	2.9	3.7	3.3	2.2	2.6	2.2	36.8
MOUNT CRAG	4050	4.6	11.3	11.5	8.7	8.4	8.6	4.2	3.0	2.0	1.6	1.8	3.6	69.3
MOUNT GARDNER	2860	6.9	12.0	12.2	12.3	8.6	8.5	6.9	5.1	4.3	2.6	2.6	4.3	86.3
OLALLIE MEADOWS	3700	9.5	18.7	14.8	19.0	13.8	12.7	10.1	6.5	4.2	2.8	2.0	4.7	118.8
PARADISE	5120	8.4	19.6	13.9	16.0	12.3	11.4	10.4	7.2	4.0	1.6	1.2	4.5	110.5
PARK CREEK RIDGE	4600	4.6	10.7	11.1	10.7	7.9	5.9	4.0	2.5	1.8	1.3	1.2	2.2	63.9
PIGTAIL PEAK	5900	5.0	12.9	9.2	11.2	8.2	8.8	6.7	4.8	2.9	1.4	1.1	2.3	74.5
POPE RIDGE	3540	2.0	6.3	5.0	5.7	4.0	4.1	2.2	1.9	2.1	.9	1.0	1.1	36.3
POTATO HILL	4500	4.0	10.7	8.2	9.5	6.7	7.1	4.7	4.5	2.5	1.5	.7	2.3	62.4
QUARTZ PEAK	4700	2.9	6.9	7.2	5.9	4.5	4.0	3.3	3.8	3.4	2.1	2.2	2.5	48.7
RAINY PASS	4780	4.4	8.6	7.2	7.9	7.5	5.7	4.0	3.0	2.1	1.7	1.1	2.8	56.0
REX RIVER	4000	7.6	13.3	16.2	14.2	10.5	8.6	6.7	4.8	3.8	1.9	2.9	4.8	95.3
SALMON MEADOWS	4500	1.8	3.3	2.2	1.8	1.8	2.4	2.0	2.4	2.7	1.3	1.2	.9	23.8
SASSE RIDGE	4200	4.4	9.9	6.9	9.6	6.4	5.9	4.1	2.1	1.1	.6	.6	1.8	53.4
SHEEP CANYON	4030	9.1	21.7	12.1	17.3	12.6	14.1	7.9	7.7	4.6	1.8	1.7	4.4	115.0
SKOOKUM CREEK	3920	10.5	19.8	15.8	21.1	15.8	14.5	12.3	6.1	5.3	2.6	2.6	5.3	131.7
SPENCER MEADOW	3400	7.0	15.3	11.9	15.6	12.4	11.3	5.8	4.7	2.7	1.6	1.4	3.1	92.8

* - Average not established. C-Conditional Average (based on less than 25 years of data)

Monthly Precipitation Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
SPIRIT LAKE	3120	6.7	13.0	9.9	17.1	9.3	10.8	5.9	5.5	2.5	.7	1.4	2.3	85.1
STAMPEDE PASS	3860	6.7	14.2	10.9	13.3	10.4	9.2	6.7	5.4	3.0	2.0	1.8	3.7	87.3
STEVENS PASS	4070	7.0	15.0	10.4	12.1	9.1	7.1	5.7	4.5	2.8	2.0	1.3	3.6	80.6
SURPRISE LAKES	4250	5.9	17.1	11.2	13.1	10.4	10.5	8.1	5.5	3.9	1.9	1.4	3.2	92.2
THUNDER BASIN	4200	6.2	13.0	10.9	10.3	5.5	4.8	6.2	2.7	2.7	2.1	2.3	2.0	68.7
TINKHAM CREEK	3000	7.6	13.3	15.0	15.2	10.4	8.5	6.6	4.7	3.8	1.9	2.8	4.7	94.5
TOUCHET #2	5530	2.5	9.6	6.1	8.4	6.4	6.6	4.0	3.4	2.4	.9	1.1	1.9	53.3
TROUGH	5300	1.5	4.6	3.7	3.5	3.3	2.3	1.5	1.4	1.3	.8	.9	1.3	26.1
UPPER WHEELER	4400	1.5	5.2	3.6	3.5	2.7	2.5	2.1	1.4	2.2	.6	.4	1.6	27.3
WELLS CREEK	4200	8.3	9.1	13.2	12.4	9.1	7.4	5.8	4.1	3.3	2.5	3.2	5.0	83.4
WHITE PASS E.S.	4500	4.8	6.7	5.5	7.3	6.1	3.0	2.5	1.6	1.9	.2	.6	1.5	41.7

* - Average not established. C-Conditional Average (based on less than 25 years of data)

Glossary:

A, Accumulated

Data value summed over several previous measurement periods.

AM, Aerial Marker

A vertical marker with equally-spaced crossbars at one- and two-foot increments. The depth of snow at these remote sites is determined by observation from low-flying aircraft. Snow water equivalent is calculated using measurements of snowpack density from nearby snow measurement sites.

Average

The mean value for a 30-year base period. The 30-year average is the accepted standard set by the World Meteorological Organization. The current base period is 1961-1990. A new 30-year average is calculated every 5 years. Standard averages are computed for sites having at least 25 years of data.

Basin

The major drainage area in which a measuring site is located.

Conditional Average

An average based on less than 25 years of data.

D, Disc., Discontinued

Site is no longer active and data collection has been discontinued.

Data

Refers to snow water equivalent or precipitation amounts.

E, Est, Estimate

Data value developed from a long-term correlation with a currently measured site. Estimates are provided when a site has been discontinued or a manual measurement was not made.

Elevation

The vertical reference of a site location above mean sea level, measured in feet.

Max Date, Maximum Date

The date when the snow water equivalent of the seasonal snowpack was at its highest prior to melting.

Max SWE, Maximum Snow Water Equivalent

The highest recorded value of snow water equivalent for the seasonal snowpack, in inches.

Meltout Date

The date when the seasonal snowpack was completely melted at a snow measuring site.

Months

Month names that head data columns in this report indicate:

1. Snow depth and snow water equivalent measurements that are usually taken near the end or middle of the month, and reported as first of month or fifteenth of month readings. This explains why, for example, a February 27 and a March 15 reading are shown under the March column.
2. Precipitation increment or catch measured during the month indicated.

Glossary:

Precipitation

The liquid equivalent (inches) of rainfall, snow, sleet, or hail, collected by precipitation storage gauges.

Seasonal Snowpack

The snowpack that typically starts accumulating in the fall or early winter and remains until meltout occurs the following spring or summer. This does not include the intermittent snowpacks that occasionally occur in the early fall or early summer.

SNOTEL

Abbreviation for SNOwpack TELemetry. A west-wide system for obtaining snow water equivalent, precipitation, air temperature, and other hydrologic measurements from remote data sites via radio transmission.

Snow Course

A permanently marked data site where manual snow measurements are collected.

Site Number

An indexing/locating number based on alpha and numeric grid divisions. Refer to the Data Site Maps included with this report.

Snow Depth

An average of the vertical measurements of the depth of the snow measured at the snow course sample points and recorded to the nearest inch. Snow depth at aerial markers is estimated to the nearest half foot unless a ground measurement is made.

Start Date

The date when the seasonal snowpack first began to accumulate at a snow measuring site.

SWE, Snow Water Equivalent

The depth of water in the snowpack, if the snowpack were melted, expressed in inches.

WY, Water Year

The water year in North America is referred to as the twelve month period beginning October 1 in one year and ending September 30 of the following year. The water year is designated by the calendar year in which it ends.

The Following Agencies and Organizations Cooperate With the Natural Resources Conservation Service in Snow Survey Work:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia	Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakima Indian Nation Whatcom County Pierce County
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs		
State	Washington State Department of Ecology Washington State Department of Natural Resources	Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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